

REMARKS

Reconsideration of the application is requested.

Claims 1-5 and 9-10 remain in the application. Claims 1-5 and 9-10 are subject to examination. Claims 1, 5 and 9 have been amended. Claims 6-8 and 11 were previously canceled to facilitate prosecution of the instant application.

Under the heading "Claim Rejections - 35 USC § 112" on page 2 of the above-identified Office Action, claim 1 has been rejected as being indefinite under 35 U.S.C. § 112, first paragraph.

More specifically, the Examiner states that the specification and applicants' comments support the recitation of the word "or" and not "and" in claim 1. We agree and note that the recitation "one of b and c" is the same as reciting "b or c". However, claim 1 has been amended to recite "or" instead of "one of ..." as it is more clear and is now acceptable language.

It is accordingly believed that this change to claim 1 meets the requirements of 35 U.S.C. § 112, first paragraph. The above-noted changes to the claims are provided solely for clarification or cosmetic reasons. The changes are neither

provided for overcoming the prior art nor do they narrow the scope of the claim for any reason related to the statutory requirements for a patent.

Under the heading "Claim Rejections - 35 USC § 101" on page 3 of the above-identified Office Action, claim 5 is rejected as allegedly not directed to statutory subject matter. Claim 5 has been amended in view of the Examiner's comments that no protecting step is accomplished. The preamble of claim 5 has been amended to recite its useful end function which is provided by the body of the claim language.

A feature of the invention is the local indication of entry points of functions or subroutines. A correlation of data takes place at the entry address without prior reference to a global address table and without a calculation that is performed before the jump to the entry address. The method can be used as a means of protection, but the method itself is concerned with the verification or identification of the entry addresses. Therefore, claim 5 has been amended to read "a method for verifying entry addresses of a computer program." The method enables a decision whether the address of a jump is an entry address of a function or not.

Support for changing the word "identifying" to "verifying" is found on page 4, lines 9-11 of the specification which recites an automatic check to determine whether the correlation data is satisfied when executing a function call. Support for the recitation of a computer program is found on page 1, lines 12-13.

Under the heading "Claim Rejections - 35 USC § 102" on pages 3-5 of the above-identified Office Action, claims 1-5 and 9 have been rejected as being fully anticipated by U.S. Patent No. 5,797,014 to Gheith (hereinafter Gheith) under 35 U.S.C. § 102.

Gheith aims at facilitating access to functions that are extraneous to a calling link module. A word is inserted immediately before an entry point of an exported function to indicate the offset of the pointer to a global offset table for the respective link module from the exported function. Each exported function will have inserted immediately before its entry point a word containing an offset of the global offset table pointer for that link module from the exported function. The Gheith taught method is concerned with a simplification of the addressing process so that the compilation of a plurality of callable functions is simplified. However, this is not a verification step of a permissible entry address as taught in claim 1 of the instant

application.

The specification of the instant application describes several variants of the inventive method, by which permissible entry addresses are verified by reference to correlated data. The addresses of the correlated data are stored immediately before or after the address of the program entry. This does not mean the virtual address of the program entry, which is stored in a table or list of permissible entry addresses (e.g. as in Gheith), but the actual program instruction code at the position of the program that is designated by the entry address. At the position of the permissible entry address, but not within the program code stored at this address, the address of a correlated data is stored, which may simply contain the entry address again, where the program execution will then be continued. The correlated data are stored in especially reserved memory areas, like an address table, but with the difference that these data are referred to only as correlated data when the permissible program entry is addressed. It is not meant as a reference list of entry addresses. The jump to the entry address is verified as legal, if there is a correlation with the data at the address which is stored immediately before or after the program instruction at the entry address.

The correlation with program data can be provided in non-reserved memory areas, as it is described in the specification in connection with alternative embodiments. This solution presupposes an upper boundary of the number of bytes of each program instruction, in order to offer the possibility to have a correlation between code data items that are at least the maximal number of bytes away from one another. This guarantees that the correlation is not verified within the same program instruction. Another way to state this is to say that the correlation is verified between code data items which are at least as many bytes away from one another as the maximum length of any individual program instruction.

The method of the instant application is not concerned with the calculation of the entry addresses in the process of the compilation of a program as in Gheith, but has the purpose to enable a decision whether a current address is intended as a permissible entry address or not. Claims 5 and 9 have been amended to further clarify the purpose of the correlations. The correlations are used to decide at any address of the program code whether the address is a permissible entry or not. This is done by an execution of a reference to special data addresses, which is called the correlation of data. The correlation of data is just a reference to additional

information enabling the verification of a current address as a permissible entry address.

Claim 5 has been amended to recite "providing the correlation of data as a correlation between code data items, the code data items being disposed at a distance exceeding a maximal length of program instructions". An example of this method is described in the last paragraph on page 7 of the specification.

With respect to claim 9, the last paragraph has been deleted and further amended to recite the limitation that the specific byte sequence is selected to avoid random correlations. This is disclosed in the first paragraph on page 7 of the specification.

For the above stated reasons, the Examiner is respectfully requested to withdraw the anticipation rejection.

Under the heading "Claim Rejections - 35 USC § 103" on page 6 of the above-identified Office Action, claims 10 is rejected as being obvious over U.S. Patent No. 5,797,014 to Gheith (hereinafter Gheith) in view of U.S. Patent No. 4,439,828 to Martin (hereinafter Martin) under 35 U.S.C. § 103.

Martin discloses the substitution of a program instruction with an instruction that is recognized as a no-operation instruction by the processor. But this is intended to prevent the execution of a special instruction at a special location within the program. Therefore, there is no reason to apply this special means in the method of Gheith. Since Gheith describes the insertion of the actual offset of an entry point from another address and there are no instructions that do not have to be performed, the insertion of no-operation code does not make any sense in the method of Gheith.

In contrast, the invention of the instant application makes use of the no-operation code to enable the correlation of data in such an unambiguous way that a verification of the entry address is made possible.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 1, 5 or 9. Claims 1, 5 and 9 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 1, 5 or 9.

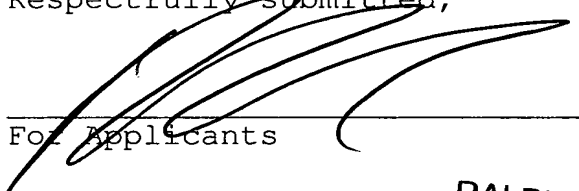
Appl. No. 09/829,328  
Amdt. Dated September 13, 2005  
Reply to Office Action of June 15, 2005

In view of the foregoing, reconsideration and allowance of claims 1-5 and 9-10 are solicited.

If an extension of time is required, petition for extension is herewith made. Any extension fee associated therewith should be charged to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

  
For Applicants

REL:cgm

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